



Published in final edited form as:

Cultur Divers Ethnic Minor Psychol. 2015 July ; 21(3): 337–344. doi:10.1037/a0037543.

Perceived Discrimination, Coping, and Quality of Life for African-American and Caucasian Persons with Cancer

Thomas V. Merluzzi,

University of Notre Dame

Errol J. Philip,

Memorial Sloan Kettering Cancer Center

Zhiyong Zhang, and

University of Notre Dame

Courtney Sullivan

University of Massachusetts Medical School

Abstract

In racial disparities research, perceived discrimination is a proposed risk factor for unfavorable health outcomes. In a proposed “threshold-constraint” theory, discrimination intensity may exceed a threshold and require coping strategies, but social constraint limits coping options for African Americans, who may react to perceived racial discrimination with disengagement, because active strategies are not viable under this social constraint. Caucasian Americans may experience less discrimination and lower social constraint, and thus may use more active coping strategies. 213 African Americans and 121 Caucasian Americans with cancer participated by completing measures of mistreatment, coping, and quality of life. African Americans reported more mistreatment than Caucasian Americans ($p < .001$) and attributed mistreatment more to race/ethnicity ($p < .001$). In the mistreatment-quality of life relationship, disengagement was a significant mediator for Caucasians ($B = -.39; CI .13-.83$) and African Americans ($B = -.20; CI .07-.43$). Agentic coping was a significant mediator only for Caucasians ($B = -.48; CI .18-.81$). Discrimination may exceed threshold more often for African Americans than for Caucasians and social constraint may exert greater limits for African Americans. Results suggest that perceived discrimination affects quality of life for African Americans with cancer because their coping options to counter mistreatment, which is racially based, are limited. This process may also affect treatment, recovery, and survivorship.

Keywords

perceived discrimination; cancer; health disparities; coping; mistreatment

A growing body of evidence suggests that African Americans experience less favorable cancer outcomes than their Caucasian counterparts. According to the American Cancer Society (2011), five-year survival rates following diagnosis are substantially lower for African Americans than for Caucasians for many types of cancers (e.g., breast, colorectal, prostate, bladder, uterine). Additionally, African Americans tend to have more aggressive, later stage tumors by the time of detection and diagnosis (American Cancer Society, 2011). These inequities in cancer outcomes are just one component of a larger trend: African Americans do not fare as well as Caucasians in many domains of health. At every stage in the healthcare process, from prevention to treatment, African Americans seem to be at a disadvantage (Cooper, Beach, Johnson, & Inui, 2006; Griffith, Neighbors, & Johnson, 2009; Klassen, Smith, Shariff-Marco, & Juon, 2008). These pervasive disparities likely have many underlying causes, including such factors as genetic differences in susceptibility to certain illnesses, medical mistrust, and differences in the availability of healthcare services in low-income versus high-income areas.

One potential cause of these disparities, in particular, has received substantial attention in the health psychology field, despite challenges in definitions and measurement: discrimination. Discrimination has long been known to have serious detrimental effects on psychological well-being, with the American Psychiatric Association (2006) stating that “racism and racial discrimination adversely affect mental health by diminishing the victim’s self-image, confidence and optimal mental functioning.” Considering discrimination as a factor in physical health is a logical next step. Thus, many researchers (Brondolo, Lackey, & Love, 2011; Clark, Anderson, Clark & Williams, 1999) have asked some variation of the question: could the experience of discrimination itself be an underlying cause of disparities in health outcomes for African Americans across a number of illness conditions? If so, how does discrimination or racial/ethnic mistreatment result in these less favorable health outcomes including disease and quality of life outcomes? Many possible pathways have been proposed; for example, the experience of discrimination might lead to stress, which has physical manifestations that adversely affect health and quality of life (Clark, Anderson, Clark, & Williams, 1999), or the subtle racist beliefs and attitudes of healthcare providers may prevent referrals for healthcare services or lead to poor communication between African Americans and their doctors, medical mistrust, and less health care utilization (Gerend & Pai, 2008; Van Ryn & Burke, 2000).

As the connection between discriminatory treatment and poor health outcomes has been delineated, some researchers have noted that African Americans may experience particularly strong adverse effects because they may be subject to multiple types of discrimination (e.g., racism, sexism, ageism, and discrimination on the basis of socio-economic status) in their daily lives. This phenomenon has been termed double, triple, or quadruple jeopardy (St. Jean & Feagin, 1998; Woods-Giscombe & Lobel, 2008). Moreover, there may be an accumulation of what have been termed micro-aggressions (Sue et al., 2007), which are everyday brief episodes of racially-based mistreatment. The stress of being discriminated against with such frequency and intensity may work to push an individual past a certain threshold, at which point the experience of daily discrimination becomes salient and distressing and may have health implications, including compromised treatment efficacy and

psychological well-being, as well as impaired quality of life, which has emerged as an important health outcome (Fallowfield, 2002)

Within the existing body of research linking discrimination to health outcomes, a distinction is often made between objective and subjective measures of discrimination. Most researchers agree that measures of perceived discrimination, rather than objective measures, hold the most predictive value when seeking to understand how discrimination affects an individual (Clark et al., 1999; Krieger et al., 2010). The occurrence of some form of treatment or behavior, which could be technically defined as discrimination, may not necessarily be perceived as such by the targeted individual. In such a case, the expected psychological or physical consequences of discrimination may still be measurable; however, further consideration of whether the individual perceives the incident as discriminatory may represent an even stronger predictor of the health consequences of the incident. Thus, in seeking to understand the full impact of discrimination on health, researchers focus on “perceived mistreatment” (PM), which is defined as occurring in any instance where an individual believes that he/she is disadvantaged, interprets this event as mistreatment, and reports/recalls it as such afterward (e.g., when asked by researchers) (Klassen et al., 2008; Krieger, Rowley, Herman, Avery, & Phillips, 1993).

A number of studies have suggested a link between PM or discrimination and health outcomes for African Americans such as elevated ambulatory blood pressure (Brondolo, Love, Pencille, Schoenthaler, & Ogedegbe, 2011; Guyll, Matthews, & Bromberger, 2001), the development of atherosclerosis (Lewis et al., 2006), lower utilization of preventive services, and lower compliance with the advice of healthcare providers (Klassen et al., 2008). In addition, a small body of research has focused on the effects of perceived mistreatment on African Americans with cancer. For example, Mandelblatt et al. (2003) showed that African American women who perceived racist mistreatment from healthcare providers during their breast cancer treatment reported lower long-term satisfaction with their medical care than did women who perceived less mistreatment. Thus, PM not only affects the physical health of African Americans with cancer, but affects other domains of their lives, including mental and emotional well-being and quality-of-life (QOL; Ferrell, Grant, Funk, Otis-Green, & Garcia, 1997). The relevance of QOL is evidenced by the fact that it is a critical outcome in the vast body of health psychology research, generally, and in literature specifically focused on African Americans (Ashing-Giwa, Ganz, & Petersen, 1999; Campbell et al., 2004; Utsey, Payne, Jackson, & Jones, 2002). Based on its widespread inclusion in clinical trials (Osoba, 2011), its prominence on the world stage (WHO, 1995), and the critical role it plays in cancer treatment and survivorship (Hewitt, Greenfield, & Stovall, 2005), QOL has emerged as a critical health outcome and relevant for the study of racial mistreatment in the context of cancer.

One facet of the extant PM-QOL literature examines how African Americans cope with mistreatment/discrimination. Studies in this area have shown that African Americans and Caucasians tend to employ different coping strategies to deal with stressors, but the findings do not show a very consistent pattern of differences (Brondolo, ver Halen, Pencille, Beatty, & Contrada, 2009). For example, Krieger (1990) and Krieger and Sidney (1996) found that African Americans more often remain quiet about experiences of unfair treatment than do

Caucasians. In contrast, Plummer and Slane (1996) found that African Americans often employ confrontive coping strategies rather than other problem-focused or emotion-focused strategies. Likewise, the cancer literature is somewhat incoherent, exhibiting contradictory findings (Clark et al., 1999; Klassen et al., 2008; Thomas et al., 2008) with regard to differences in coping between African Americans and Caucasians (e.g., Culver, Arena, Antoni, & Carver, 2002; Rodrigue, 1997). In the context of the current study, there may be important individual and group differences in strategies for coping with cancer, but research to date has not been guided by a theory of coping strategy selection and has thus failed to measure the actual sources of this variation.

Threshold-Constraint Theory

A theory is forwarded in this paper, based on the idea that socio-cultural context plays a role in the coping strategies that African Americans and Caucasians choose (Revenson & Lepore, 2012), with the aim of unifying the PM-coping-QOL literature. This theory is grounded in several factors thought to be important in the process of selecting coping strategies (namely, mistreatment threshold and social constraint); it is founded on the assumption that past findings may have been contradictory and unclear because they did not explicitly take these factors into account. It should be noted that this theory could be generalized to African American and Caucasian populations without cancer (either healthy individuals or those with some other illness). However, it is particularly important to foster an understanding of how PM might affect cancer patients and survivors, given the already difficult and stressful situation they are experiencing and the fact that cancer represents one of many conditions in which African Americans fare more poorly than their Caucasian counterparts.

Previous research has explored the idea that coping strategies may act as mediators of the relationship between PM and QOL/health-related outcomes (Klassen et al., 2008; Thomas et al., 2008; Utsey et al., 2002). That is, a particular experience of mistreatment/discrimination may have its impact on QOL via the coping mechanisms that are called upon in that situation. The long-standing transactional theory, proposed by Lazarus and Folkman (1984), emphasizes the role of appraisals in the process of choosing a coping strategy. When faced with a stressor such as mistreatment, the individual first makes an appraisal of the stressor itself and then makes an appraisal about what can be done in reaction to that stressor. In particular, the individual must choose whether to try to address the external demands of the stressor itself or the internal demands brought about by the stressor (e.g., emotions the stressor elicited in the individual). If the individual decides that the external aspects of the stressor cannot be dealt with directly, a more internal, emotion-focused coping strategy will be pursued. But if the stressor can be directly addressed, the individual is likely to choose a more agentic, active, problem-focused coping strategy (Maes, Leventhal, & deRidder, 1996).

In seeking to better understand how individuals select a coping strategy following mistreatment, Plummer and Slane (1996) noted that the social context of mistreatment may limit which coping options seem viable. This phenomenon, sometimes referred to as social constraint (Lepore & Revenson, 2007) describes an individual's perception that certain coping strategies would be inappropriate or risky in certain situations (Bonanno, Rennie, & Dekel, 2005; Lepore, Silver, Wortman, & Wayment, 1996; Schmidt & Andrykowski,

2004). In the current study, the constraint is in relation to coping responses. Individuals who perceive social constraint pressures typically do not attempt to use those coping strategies that appear risky or socially unacceptable. For example, an African American individual who perceives racial discrimination in the workplace may not openly confront this mistreatment because it could lead to harsh consequences, such as the loss of employment. This social constraint phenomenon could help to explain previous findings that African Americans keep quiet about many experiences of mistreatment (Krieger, 1990; Krieger & Sidney, 1996). This account of social constraint is also congruent with the Lazarus and Folkman (1984) model; social constraint could be one of the primary factors that is considered when choosing whether or not to pursue an active, problem-focused coping strategy.

Social constraints that limit active coping strategies may be especially strong when an individual is facing subtle forms of mistreatment. A number of authors have noted that expressions of racism have become increasingly subtle over time (Ikuenobe, 2010; Reid & Foels, 2010; Sue et al., 2007). It may be difficult to confront or actively cope with subtle forms of racism, because the perpetrator can easily deny having discriminatory intentions. In other cases, the perpetrator may not have had a conscious discriminatory intent (Sue et al., 2007). When subtle racism occurs, an avoidant or disengagement coping strategy may be the most feasible way of maintaining one's social functioning, but may nonetheless be detrimental to health and overall QOL.

Taken together, these theoretical ideas provide a clear explanation for low QOL as observed in African Americans with cancer who experience mistreatment: this stressful life situation would best be approached with coping flexibility, wherein the individual could choose from a broad range of coping strategies for each stressor encountered, but social constraints make this type of flexibility difficult by limiting otherwise viable coping strategies. This juxtaposition of competing forces is termed a "threshold-constraint" process, in which mistreatment beyond a certain subjective threshold is perceived by the victims as discrimination and, at the same time, there exists some degree of constraint limiting the options available for coping with this stressor (Lepore & Revenson, 2007). This constraint may then negatively affect health and well-being. Whereas, the threshold-constraint theory proposed is a general model, it is being tested in the context of coping with cancer and thus specifically focuses on cancer-related quality of life as the primary outcome. Cancer may be one of many diseases in which this process plays a role in health outcomes.

The present study investigates how African Americans' and Caucasians' experiences of cancer differ, especially in regard to PM, coping, and QOL. In the current study, PM is defined in terms of a two-step process: first, participants rated how often they are mistreated and, second, to what cause they attribute the mistreatment (race and ethnicity were options). Thus this assessment of mistreatment is aligned with what Sue et al. (2007) have termed micro-aggressions of which some may represent racism, but may also be sexism, ageism, and so forth.

It is hypothesized that coping strategies (specifically agentic, active, emotion-focused, and disengagement coping strategies) will mediate the relationship between PM and QOL for

African Americans and Caucasians with cancer (See Figures 1 and 2 for the overall model), but the pattern of mediation will differ between the two groups. Given that disengagement and emotion-focused strategies can be invoked under high or low social constraint, it is expected that these coping strategies will be mediators of the relationship between PM and QOL for both African Americans and Caucasians. However, because agentic and active coping strategies are viable *only* under low social constraint, these strategies are expected to mediate the relationship between PM and QOL *only* for Caucasians, who typically experience low social constraint. Based on previous findings, disengagement and emotion-focused strategies will be more closely associated with poorer QOL, while agentic and active strategies will predict better QOL.

Method

Participants

The sample consisted of 335 participants, 36.1% of whom were Caucasians and 63.9% of whom were African American. Ages ranged from 27 to 92, with a mean age of 60.08 ($SD = 12.10$); 74% of the participants were female. The most common cancer types were breast (54.3%), prostate (11%), lung (4.2%), colon (3.9%), and non-Hodgkins lymphoma (3.6%). For both African Americans and Caucasians the median time post-diagnosis was 6 years. There were significantly more African American breast cancer participants (69% of African American participants) than Caucasian participants (43% of Caucasian participants). Caucasian participants had slightly more lung, prostate, cervical, and lymphoma cancers than African Americans, though the differences were not statistically significant. Other demographic and medical information for the sample is displayed in Table 1. Participants were from the Midwest, South, and West. They were recruited via public announcements, newspaper advertisements, support groups, and e-mails to health organizations. Participants received materials via mail, completed the surveys at home, returned them by mail, and were compensated \$40. For those who consented, medical information was verified by contact with participants' physicians.

Materials

Interpersonal Maltreatment Scale (IMS)—Perceived discrimination was assessed using the IMS, a ten-item scale measuring the frequency and a checklist of perceived causes of mistreatment (Guyll et al., 2001). Each item describes common scenarios involving inequitable treatment that are not specific to any one type of discrimination (e.g., threatening/harassing, disrespect, poor service). Participants respond to each item on a scale of 1 (often), 2 (sometimes), 3 (rarely), or 4 (never); no time frame of reference is provided. Williams, Yu, Jackson, and Anderson (1997), who developed the scale, found that IMS items were related to self-report of ill health especially for African Americans. Reliability for this measure was found to be high in the present study (Cronbach's $\alpha = .89$); therefore, responses to all ten items are summed to create an overall mistreatment score. Consistent with Guyll et al. (2001) and Williams et al. (1997), if participants respond with a 1 or 2 (meaning often or sometimes) to any of the ten items, they are asked to indicate the reason(s) they believe they were treated in this way. They can choose any number of causes of mistreatment from the following list: race, ethnicity, gender, income level, physical

appearance, sexual orientation, age, language, or other. They merely checked all that applied as causes for mistreatment.

Cancer Behavior Inventory (CBI)—Agentic coping was assessed with the CBI (Merluzzi et al., 2001). Each item in the CBI consists of a statement describing a coping activity or strategy; participants rate their confidence in their ability to execute each strategy now or in the near future on a scale from 1 (not at all confident) to 9 (totally confident). Although the scale was designed to assess self-efficacy for coping with the stressors of cancer specifically, we were interested only in more general (non-cancer) items for this study. That is, because we were interested in how participants were coping with PM (in addition to their cancer diagnosis), we used only the 17 items of the CBI that do not refer specifically to cancer. This 17-item version of the CBI had a Cronbach's alpha of .92 and was highly correlated with the 16 unused items ($r = .84, p < .01$), suggesting that this non-specific version is a good indicator of self-efficacy for coping or agentic coping more generally.

COPE Scale (COPE)—The brief version of the COPE scale (Carver, 1997) is composed of 28 items assessing coping strategies. Participants read statements describing different coping strategies/actions and rated how much they have been using each strategy, on a scale from 1 (not at all) to 4 (a lot). The brief COPE consists of 14 subscales with 2 items each; for the present study, participants completed all 28 items, but only certain subscales were used for analyses.

We calculated scores for active, emotion-focused, and disengagement coping strategies by combining subscales from the COPE in a way which corresponds to common conceptualizations of these strategies in the literature based on the transactional (Folkman & Lazarus, 1984) and self-regulation models (Carver & Scheier, 1998). We confirmed the appropriateness of this approach by checking for strong positive correlations between the COPE subscales being combined into each of the composite measures. In this way, the convergent validity of each coping strategy composite measure was confirmed (all $ps < .01$); discriminant validity of these measures is of far less importance given that we expect many of the subscales and strategies to be at least modestly positively correlated with one another. For the purpose of testing the threshold-constraint process, it was crucial that the subscales of the COPE were configured in a manner that preserved the proposed structure along the activity-disengagement continuum. This theoretical structure was maintained as the basis for the combination of particular subscales, although we recognize that arguments could be made for other combinations on the basis of inter-correlations or factor analyses.

The active coping measure ($\alpha = .79$) was comprised of the brief COPE items for active coping, planning, and using instrumental support subscales. Emotion-focused coping ($\alpha = .68$) was comprised of the items for the acceptance, venting, and using emotional support subscales. Finally, the measure of disengagement coping ($\alpha = .72$) was made up of the items from the denial and behavioral disengagement subscales of the brief COPE. Several COPE subscales were not used because they did not fit conceptually or empirically into any of the coping strategies of interest; these unused subscales were humor, religion, self-distraction, substance use, and self-blame. Although an argument could be made that self-distraction,

substance use, and self-blame represent disengagement coping, they did not fit the current conceptualization of the construct of disengagement coping that was derived from self-regulation theory (Carver & Scheier, 1998), which conceptualized disengagement as involving true withdrawal from the stressor.

Functional Assessment of Cancer Therapy Scale (FACT-G, Version 4)—The primary measure of QOL for the present study was the FACT, which consists of 27 items assessing physical, social/family, emotional, and functional well-being (Cella et al., 1993). Each item is a statement pertaining to a particular domain of well-being; participants rate how true each statement is for them, on a scale of 1 (not at all) to 5 (very much). The alpha for the FACT for this sample was 0.66. The FACT has excellent test-retest reliability, and convergent validity was established by showing strong correlations with the Functional Living Index-Cancer ($r = 0.80$), and the Quality of Life Index ($r = 0.74$). The FACT also converges with several other measures, including the Taylor Manifest Anxiety Schedule ($r = 0.57$) and the Brief Profile of Mood States ($r = 0.69$) (Cella, 1997).

Satisfaction with Life Scale (SWLS)—The Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffen, 1985) is a brief, 5-item global measure of current life satisfaction in which participants rate each item on a 5-point scale from ‘strongly agree’ to ‘strongly disagree’. Previous psychometric studies have shown a test-retest coefficient of .82 with a two month re-test interval and the measure correlates moderately with lengthier measures of life satisfaction (Diener et al., 1985). For the purposes of this study, the item stating “The conditions of my life are excellent” was omitted because cancer patients in prior studies in our lab indicated that the item was inappropriate given that they were dealing with a potentially life-threatening disease; the remaining four items comprised a scale with acceptable internal consistency ($\alpha = .77$). Scores on the SWLS were added to scores from the FACT-G to create a composite measure of QOL/well-being. Given that the FACT has a higher range of possible scores than the SWLS, this composite measure weights well-being (FACT) more heavily than life satisfaction (SWLS).

Sickness Impact Profile (SIP)—The SIP is a measure of the impact of any disease or disability. It was designed for use with a variety of demographic groups, cultural groups, and severity levels of illness (Bergner, Bobbitt, Carter, & Gilson, 1981). The SIP is based on “statements describing sickness-related behavioral dysfunction” (Bergner et al., p. 788). The total 136 items are divided into 12 categories and grouped into three dimensions: physical impact, psychosocial impact, and independent categories of impact. Each item is assigned a weight corresponding to the degree of debilitation or disease impact represented by its content. For this study only the items from the physical impact dimension were used. The score from this dimension of the scale was used as a covariate in the analyses to control for physical debilitation, given the potentially strong influence of physical impairment on well-being and QOL for cancer patients and the variability in impairment for persons with the same diagnosis.

The physical dimension contains the following categories: ambulation, mobility, and body care and movement. This subscale consists of 45 items, each describing an activity of daily functioning that might be impaired by illness symptoms (e.g., “I stand up only with

someone's help"). Participants check those items that are true for them. The test-retest reliability for the measure is high ($r = .92$), as is the internal consistency ($r = .94$) (Bergner et al., 1981). Internal consistency of the physical dimension score for the present sample was .92.

Results

Mistreatment

There were no differences on total IMS scores as a function of sex ($F=1.97$, *ns*) and no sex \times race interaction ($F=1.98$, *ns*). Thus, maltreatment did not differ as a function of sex and there was no tendency for differences among African Americans and Caucasians as a function of sex. Thus, African Americans and Caucasians could be compared on maltreatment without regard to sex and this could be considered an indirect test of the threshold hypothesis. In support of that component of the threshold-constraint hypothesis, African Americans reported significantly more PM than Caucasians ($t(333) = 5.21$, $p < .001$). As seen in Table 2, African Americans and Caucasians tended to attribute mistreatment to different types of discrimination. By a wide margin, African Americans more often attributed mistreatment to race ($t(325) = 11.11$, $p < .001$) and ethnicity ($t(325) = 4.61$, $p < .001$) than did Caucasians. There was also a marginally non-significant finding that Caucasians attributed mistreatment more to age than did African Americans ($t(324) = -1.93$, $p = .054$).

Coping Mediation Model

To test the mediation effects of the four coping strategies for Caucasians and African Americans, a mediation model was estimated as a path model using Mplus software (MacKinnon, 2008; Muthén & Muthén, 2007). This approach provides 95% bias-corrected confidence intervals using a bootstrap resampling procedure in order to test the significance of the mediation effects and the direct effect. Using this approach, any parameter for which bootstrap confidence intervals do not include 0 is considered statistically significant at the 5% alpha level. Missing data were addressed using the full information maximum likelihood (FIML) method (Little & Rubin, 2002). Age, sex, income, and physical impairment were entered as covariates in the mediation model to control for relevant demographic variables and to even the differences in how much cancer, cancer treatments or co-morbid conditions impact functional capacity.

For Caucasians the total effect from PM to QOL was significant, ($B = -1.63$; $CI 1.05-2.20$), as was the direct effect ($B = -.70$; $CI .14-1.26$) and the total indirect effects ($B = -.93$; $CI .48-1.53$) (see Figure 1). The significant direct effect within the final model indicated that partial mediation occurred; that is, a negative relationship between PM and QOL ($r = -.55$, $p < .001$) remained even when all four mediators were entered into the model. Agentic coping ($B = -.48$; $CI .18-.81$) and disengagement coping ($B = -.39$; $CI .13-.83$) were significant mediators for Caucasians. PM was negatively related to agentic coping ($r = -.45$, $p < .001$), meaning that Caucasians who experienced less mistreatment were more likely to use agentic coping. Agentic coping was positively related to QOL ($r = .62$, $p < .001$). PM was positively related to disengagement coping ($r = .44$, $p < .001$), meaning that higher levels of PM were

associated with greater use of disengagement strategies for Caucasians. Disengagement coping was negatively related to QOL ($r = -.53, p < .001$).

For African Americans, the total effect was significant, ($B = -.68; CI .10-1.46$) as were the total indirect effects ($B = -.55; CI .15-1.04$). Although PM was a significant predictor of QOL in a regression model including only PM and the covariates ($B = -.22, CI .44-1.20$), the direct effect of PM on QOL was not significant in the final model ($B = -.14; CI -.32-.71$), indicating that complete mediation occurred. Disengagement coping ($B = -.20; CI .07-.43$) was the only significant mediator for African Americans in the final model. PM was positively related to disengagement coping ($r = .36, p < .001$), meaning that high PM was associated with greater use of disengagement strategies for African Americans.

Disengagement coping, in turn, was negatively related to QOL ($r = -.51, p < .001$). Whereas agentic coping was related to QOL for African Americans it was not related to PM; thus, it was used but not in relation to perceived discrimination.

Discussion

Overall, findings of this study support the proposed threshold-constraint theory. First, it was shown that African Americans report more PM than do Caucasians, and African Americans attribute significantly more mistreatment to race and ethnicity. Social constraint effects were confirmed based on the 1) theoretical underpinnings, 2) hypotheses derived from the theory, and 3) empirical findings regarding African Americans' versus Caucasians' coping strategies that aligned with these hypotheses. As hypothesized, disengagement coping was a significant mediator for both groups. Disengagement coping was positively related to PM and negatively related to QOL, suggesting that both African Americans and Caucasians cancer patients may initiate disengagement coping strategies in the face of PM, and this may negatively affect their QOL. Also as predicted, agentic coping was a significant mediator only for Caucasians. Specifically, for Caucasians, agentic coping was negatively related to PM and positively related to QOL, suggesting that Caucasian cancer patients tend to use agentic coping strategies when they are faced with low levels of PM and that these agentic strategies positively relate to QOL.

The fact that agentic coping was a significant mediator only for Caucasians supports the hypothesis that agentic strategies are useful in the face of PM, but are not typically viable for African Americans. That is, African Americans are still likely to use agentic coping and benefit from it when they are not dealing with PM. In addition, disengagement coping was the only significant mediator for African Americans who also tend to experience high levels of PM; thus, they tend to employ disengagement strategies even though disengagement is associated with lower QOL. Indeed, African Americans use disengagement strategies significantly more than Caucasians ($t(304.81) = 2.96, p = .003$). We would argue that African Americans use disengagement coping despite its negative effects on QOL because social constraint prevents them from using more agentic coping strategies. Unfortunately, African Americans do tend to face PM often, and thus may experience a particularly strong adverse impact on QOL because of their less frequent use of agentic coping in the context of PM.

Generally, these results support prior research that has reported that racial mistreatment does impact health outcomes through a variety of pathways (Clark et al., 1999); however, this study also indicates that there may be ways by which to transform the impact of maltreatment to increase or decrease the negative effects of maltreatment. Thus, where other studies have established that maltreatment (particularly racial maltreatment) has detrimental effects (e.g., Brondolo, Love, et al., 2011; Guyll et al., 2001; Lewis et al., 2006; Klassen et al., 2008; Mandelblatt et al., 2003), the current study suggests that these direct effects may not represent the dynamics or mechanisms that may mitigate or exacerbate the maltreatment. Similarly, some findings (Krieger, 1990; Krieger & Sidney, 1996) indicate that African Americans remain quieter about experiences of unfair treatment compared to Caucasians, whereas other findings indicate that African Americans often employ confrontive coping strategies (Plummer & Slane, 1996). Again, the threshold-constraint theory proposed in this study may resolve some of these contradictory results with the inclusion of a more complex mechanism-oriented model of coping with PM.

Based on the threshold-constraint theory and the results of this study we propose that racial mistreatment is subject to strong social constraint, but also suggest that future research could investigate how levels of social constraint vary among other types of mistreatment. As argued in the case of racial mistreatment, it seems plausible that any type of mistreatment that manifests itself in subtle ways would be subject to high levels of social constraint against coping actively. Also, in some contexts, mistreatment may be subject to something like the opposite of social constraint; that is, there may be social facilitation to actively confront some types of mistreatment or discrimination. This may be especially true for the types of mistreatment that Caucasians encounter. For example, given the current socio-cultural shift towards equality and diversity, people within some social groups may be encouraged by peers to actively confront perpetrators of gender-, sexuality-, or income-based mistreatment.

Whereas the theory proposed a social constraint mechanism and the hypotheses drawn from this theory were confirmed, this study does have the limitation that social constraint was not measured directly. The complexity of social constraint and the lack of available measures that relate to it, as it is conceptualized in this study, make the development of such a measure a logical next step in this line of research. If developed carefully, it would enable further investigation and confirmation of the proposed social constraint mechanism to be pursued, and provide further insight into the results of the current study.

Findings of this study have several implications regarding racial disparities in the well-being of cancer patients. It appears that African Americans with cancer experience high levels of racial mistreatment, leading to the use of disengagement coping and potentially to poor QOL. Decreasing the occurrence of racial discrimination is one pathway to improving QOL for these patients. That approach would include working with health professionals to recognize and eliminate racial micro-aggressions (Sue et al., 2007) in health care settings. In addition, another approach would be to implement interventions that help African Americans develop adaptive coping strategies that can be used even under strong social constraint. These interventions might focus on buffering the effects of racial mistreatment through coping strategies and social support. For Caucasians with cancer, these findings

indicate that non-racial mistreatment is fairly common (e.g., sexism, ageism, etc.) and that agentic coping serves to counter the negative effects of mistreatment and improve QOL. Nonetheless, the finding of partial mediation for Caucasians implies that there are other factors that mediate or moderate PM's effect on QOL for this population, and future research should also seek to elucidate these factors.

Acknowledgments

This work was funded by grants from the National Cancer Institute (CA94914, Merluzzi; T32CA009461-28, Philip) and the National Institute of Mental Health (F31MH086977, Philip). The authors wish to thank the many cancer patients around the country who participated in this research with special thanks to the staff of the Northern Indiana Cancer Research Consortium for their participation in recruitment.

References

- American Cancer Society. Cancer facts & figures for African Americans, 2011–2012. Atlanta, GA: American Cancer Society; 2011.
- American Psychiatric Association. Resolution Against Racism and Racial Discrimination and Their Adverse Impacts of Mental Health: Position Statement. 2006. Retrieved from <http://www.psychiatry.org/practice/professional-interests/diversityomna/diversity-resources/apa-position-statements-related-to-diversity>
- Ashing-Giwa K, Ganz PA, Petersen L. Quality of life of African-American and white long term breast carcinoma survivors. *Cancer*. 1999; 85(2):418–426. [PubMed: 10023710]
- Bergner M, Bobbit RA, Carter WB, Gilson BS. The Sickness Impact Profile: Development and final revision of a health status measure. *Medical Care*. 1981; 19:787–805. [PubMed: 7278416]
- Bonanno GA, Rennie C, Dekel S. Self-enhancement among high-exposure survivors of the September 11th terrorist attack: Resilience or social maladjustment? *Journal of Personality and Social Psychology*. 2005; 88(6):984–998. <http://dx.doi.org/10.1037/0022-3514.88.6.984>. [PubMed: 15982117]
- Brondolo, E.; Lackey, S.; Love, E. Race, racism, and health: Evaluating racial disparities in hypertension to understand the links between racism and health status. In: Baum, A.; Revenson, TA.; Singer, JE., editors. *Handbook of Health Psychology*. 2nd. New York: Psychology Press; 2011. p. 569-594.
- Brondolo E, Love EE, Pencille M, Schoenthaler A, Ogedegbe G. Racism and hypertension: A review of the empirical evidence and implications for clinical practice. *American Journal of Hypertension*. 2011 Advance online publication.
- Brondolo E, ver Halen NB, Pencille M, Beatty D, Contrada RJ. Coping with racism: A selective review of the literature and a theoretical and methodological critique. *Journal of Behavioral Medicine*. 2009; 32:64–88. [PubMed: 19127420]
- Campbell LC, Keefe FJ, McKee DC, Edwards CL, Herman SH, Johnson LE, Colvin OM, McBride CM, Donattuci CF. Prostate cancer in African Americans: Relationship of patient and partner self-efficacy to quality of life. *Journal of Pain and Symptom Management*. 2004; 28(5):433–444. [PubMed: 15504620]
- Carver CS. You want to measure coping but your protocol's too long: Consider the brief COPE. *International Journal of Behavioral Medicine*. 1997; 4(1):92–100. [PubMed: 16250744]
- Carver, CS.; Scheier, MF. *On the Self-Regulation of Behavior*. Cambridge, UK: Cambridge University Press; 1998.
- Cella DF, Tulsky DS, Gray G, Sarafian B, Linn E, Bonomi A, Silberman M, Yellen SB, Winicour B, Brannon J. The functional assessment of cancer therapy scale: Development and validation of the general measure. *Journal of Clinical Oncology*. 1993; 11:570–579. [PubMed: 8445433]
- Cella, D. F.A.C.I.T. Manual: Manual of the Functional Assessment of Chronic Illness Therapy Scales. Evanston, IL: Center on Outcomes, Research and Education (CORE); 1997.

- Clark R, Anderson NB, Clark VR, Williams DR. Racism as a stressor for African Americans: A biopsychosocial model. *American Psychologist*. 1999; 54(10):805–816. [PubMed: 10540593]
- Cooper LA, Beach MC, Johnson RL, Inui TS. Delving below the surface: Understanding how race and ethnicity influence relationship in health care. *Journal of General Internal Medicine*. 2006; 21:S21–S27. [PubMed: 16405705]
- Culver JL, Arena PL, Antoni MH, Carver CS. Coping and distress among women under treatment for early stage breast cancer: Comparing African Americans, Hispanics, and non-Hispanic Whites. *Psycho-Oncology*. 2002; 11(6):495–504. [PubMed: 12476431]
- Diener E, Emmons RA, Larsen RJ, Griffin S. The satisfaction with life scale. *Journal of Personality Assessment*. 1985; 49:71–75. doi: http://dx.doi.org/10.1207/s15327752jpa4901_13. [PubMed: 16367493]
- Fallowfield L. Quality of life: A new perspective for cancer patients. *Nature Reviews: Cancer*. 2002; 2:873–879. [PubMed: 12415257]
- Ferrell BR, Grant MM, Funk B, Otis-Green S, Garcia N. Quality of life in breast cancer survivors as identified by focus groups. *Psycho-Oncology*. 1997; 6:13–23. [PubMed: 9126712]
- Gerend MA, Pai M. Social determinants of black-white disparities in breast cancer mortality: A review. *Cancer Epidemiology, Biomarkers, & Prevention*. 2008; 17(11):2913–2923.
- Griffith DM, Neighbors HW, Johnson J. Using national data sets to improve the health and mental health of Black Americans: Challenges and opportunities. *Cultural Diversity and Ethnic Minority Psychology*. 2009; 15(1):86–95. [PubMed: 19209983]
- Guyll M, Matthews KA, Bromberger JT. Discrimination and unfair treatment: Relationship to cardiovascular reactivity among African American and European American women. *Health Psychology*. 2001; 20(5):315–325. [PubMed: 11570645]
- Hewitt, M.; Greenfield, S.; Stovall, E., editors. *From cancer patient to cancer survivor: Lost in transition*. Committee on Cancer Survivorship: Improving Care and Quality of Life, Institute of Medicine and National Research Council; 2005.
- Ikuenobe P. Conceptualizing racism and its subtle forms. *Journal for the Theory of Social Behaviour*. 2010; 41(2):161–181.
- Klassen AC, Smith KC, Shariff-Marco S, Juon H. A healthy mistrust: How worldview relates to attitudes about breast cancer screening in a cross-sectional survey of low-income women. *International Journal for Equity in Health*. 2008; 7(5)
- Krieger N. Racial and gender discrimination: Risk factors for high blood pressure? *Social Science and Medicine*. 1990; 30(12):1273–1281. [PubMed: 2367873]
- Krieger N, Carney D, Lancaster K, Waterman PD, Kosheleva A, Banaji M. Combining explicit and implicit measures of racial discrimination in health research. *American Journal of Public Health*. 2010; 100:1485–1492. [PubMed: 19965567]
- Krieger N, Rowley D, Herman AA, Avery B, Phillips MT. Racism, sexism, and social class: Implications for studies of health, disease, and well-being. *American Journal of Preventive Medicine*. 1993; 9:82–122. [PubMed: 8123288]
- Krieger N, Sidney S. Racial discrimination and blood pressure: The CARDIA study of young Black and white adults. *American Journal of Public Health*. 1996; 86(10):1370–1378. [PubMed: 8876504]
- Lazarus, RS.; Folkman, S. *Stress, Appraisal, and Coping*. New York: Springer Publishing Co.; 1984.
- Lepore SJ, Revenson TA. Social constraints on disclosure and adjustment to cancer. *Social and Personality Compass*. 2007; 1:313–333.
- Lepore SJ, Silver RC, Wortman CB, Wayment HA. Social constraints, intrusive thoughts, and depressive symptoms among bereaved mothers. *Journal of Personality and Social Psychology*. 1996; 70(2):271–282. [PubMed: 8636882]
- Lewis TT, Everson-Rose SA, Powell LH, Matthews KA, Brown C, Karavolos K, Sutton-Tyrrell K, Jacobs E, Wesley D. Chronic exposure to everyday discrimination and coronary artery calcification in African-American women: The SWAN heart study. *Psychosomatic Medicine*. 2006; 68:362–368. [PubMed: 16738065]
- Little, RJA.; Rubin, DB. *Statistical analysis with missing data*. 2nd. New York: Wiley-Interscience; 2002.

- MacKinnon, DP. Introduction to statistical mediation analysis. New York: Taylor & Francis; 2008.
- Maes, S.; Leventhal, H.; deRidder, DTD. Coping with chronic diseases. In: Zeidner, M.; Endler, NS., editors. Handbook of Coping: Theory, Research, Applications. New York: John Wiley & Sons, Inc.; 1996.
- Mandelblatt JS, Edge SB, Meropol NJ, Senie R, Tsangaris T, Grey L, Peterson BM, Hwang Y, Kerner J, Weeks J. Predictors of long-term outcomes in older breast cancer survivors: Perceptions versus patterns of care. *Journal of Clinical Oncology*. 2003; 21(5):855–863. [PubMed: 12610185]
- Merluzzi TV, Nairn RC, Hedge K, Sanchez MA, Dunn L. Self-efficacy for coping with cancer: Revision of the Cancer Behavior Inventory (Version 2.0). *Psycho-Oncology*. 2001; 10:206–217. [PubMed: 11351373]
- Muthén, LK.; Muthén, BO. Mplus User's Guide. Sixth. Los Angeles, CA: Muthén & Muthén; 2007.
- Osoba D. Health-related quality of life in cancer clinical trials. *Therapeutic Advances in Medical Oncology*. 2011; 3:57–71. doi: [10.1177/1758834010395342](https://doi.org/10.1177/1758834010395342). [PubMed: 21789156]
- Plummer DL, Slane S. Patterns of coping in racially stressful situations. *Journal of Black Psychology*. 1996; 22(3):302–315.
- Reid LD, Foels R. Cognitive complexity and the perception of subtle racism. *Basic and Applied Social Psychology*. 2010; 32(4):291–301.
- Revenson, TA.; Lepore, SJ. Coping in social context. In: Baum, A.; Revenson, TA.; Singer, J., editors. Handbook of health psychology. 2nd. New York: Taylor and Francis; 2012. p. 193–217.
- Rodrigue JR. An examination of race differences in patients' psychological adjustment to cancer. *Journal of Clinical Psychology in Medical Settings*. 1997; 4(3):271–280. <http://dx.doi.org/10.1023/A:1026271431384>.
- Schmidt JE, Andrykowski MA. The role of social and dispositional variables associated with emotional processing in adjustment to breast cancer: An internet-based study. *Health Psychology*. 2004; 23(3):259–266. [PubMed: 15099166]
- St. Jean, Y.; Feagin, JR. Double burden: Black women and everyday racism. Armonk, NY: M.E. Sharpe; 1998.
- Sue DW, Capodilupo CM, Torino GC, Bucceri JM, Holder AMB, Nadal KL, Esquilin M. Racial microaggressions in everyday life: Implications for Clinical practice. *American Psychologist*. 2007; 62:271–286. [PubMed: 17516773]
- Thomas AJ, Witherspoon KM, Speight SL. Gendered racism, psychological distress, and coping styles of African American women. *Cultural Diversity and Ethnic Minority Psychology*. 2008; 14(4): 307–314. [PubMed: 18954166]
- Utsey SO, Payne YA, Jackson ES, Jones AM. Race-related stress, quality of life indicators, and life satisfaction among elderly African Americans. *Cultural Diversity and Ethnic Minority Psychology*. 2002; 8(3):224–233. [PubMed: 12143100]
- Van Ryn M, Burke J. The effect of patient race and socio-economic status on physicians' perceptions of patients. *Social Science and Medicine*. 2000; 50(6):813–828. [PubMed: 10695979]
- World Health Organization. The World Health Organization quality of life assessment (WHOQOL) position paper. *Social Science and Medicine*. 1995; 41:1403–1409. [PubMed: 8560308]
- Williams DR, Yu Y, Jackson JS, Anderson NB. Racial differences in physical and mental health: Socio-economic status, stress, and discrimination. *Journal of Health Psychology*. 1997; 2:335–351. [PubMed: 22013026]
- Woods-Giscombe CL, Lobel M. Race and gender matter: A multidimensional approach to conceptualizing and measuring stress in African American women. *Cultural Diversity and Ethnic Minority Psychology*. 2008; 14(3):173–182. [PubMed: 18624581]

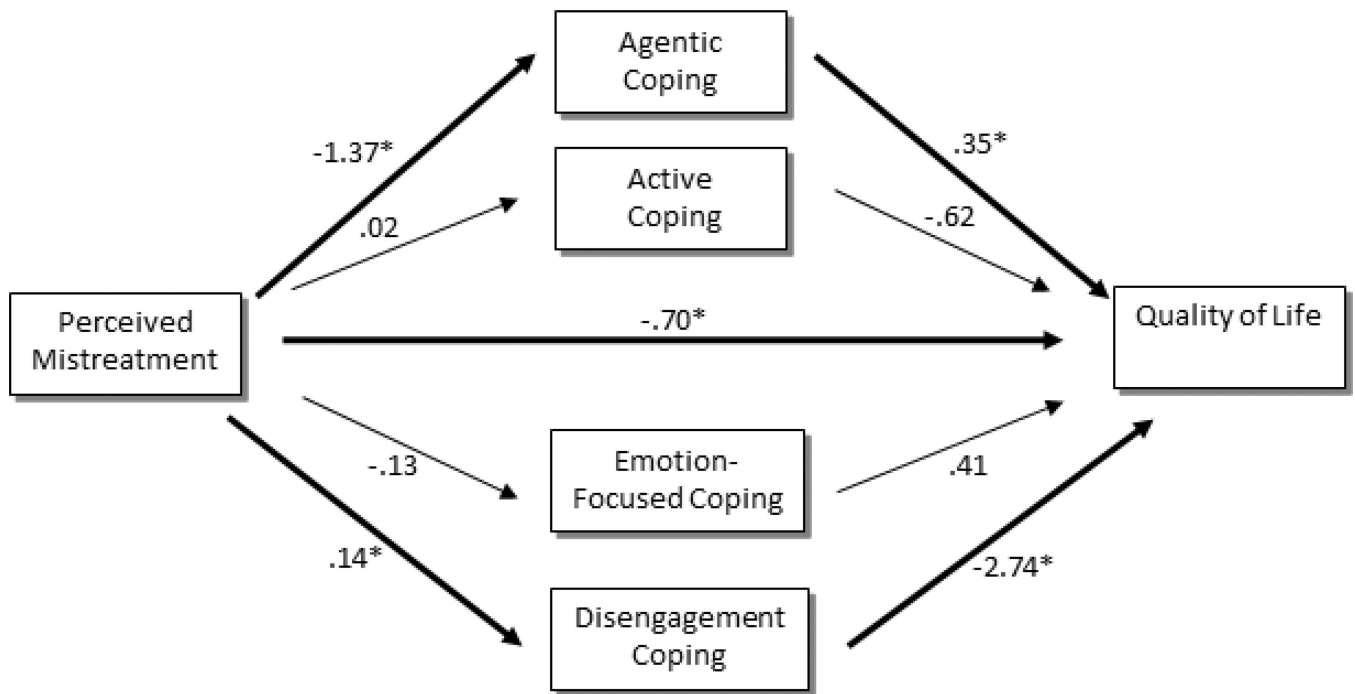


Figure 1. Final mediation model for CAs. Path coefficients with an * are significantly different from zero. Bold arrows denote mediation and direct effects which are significant. Covariates used in the model (age, physical impairment, sex, and income) are not shown.

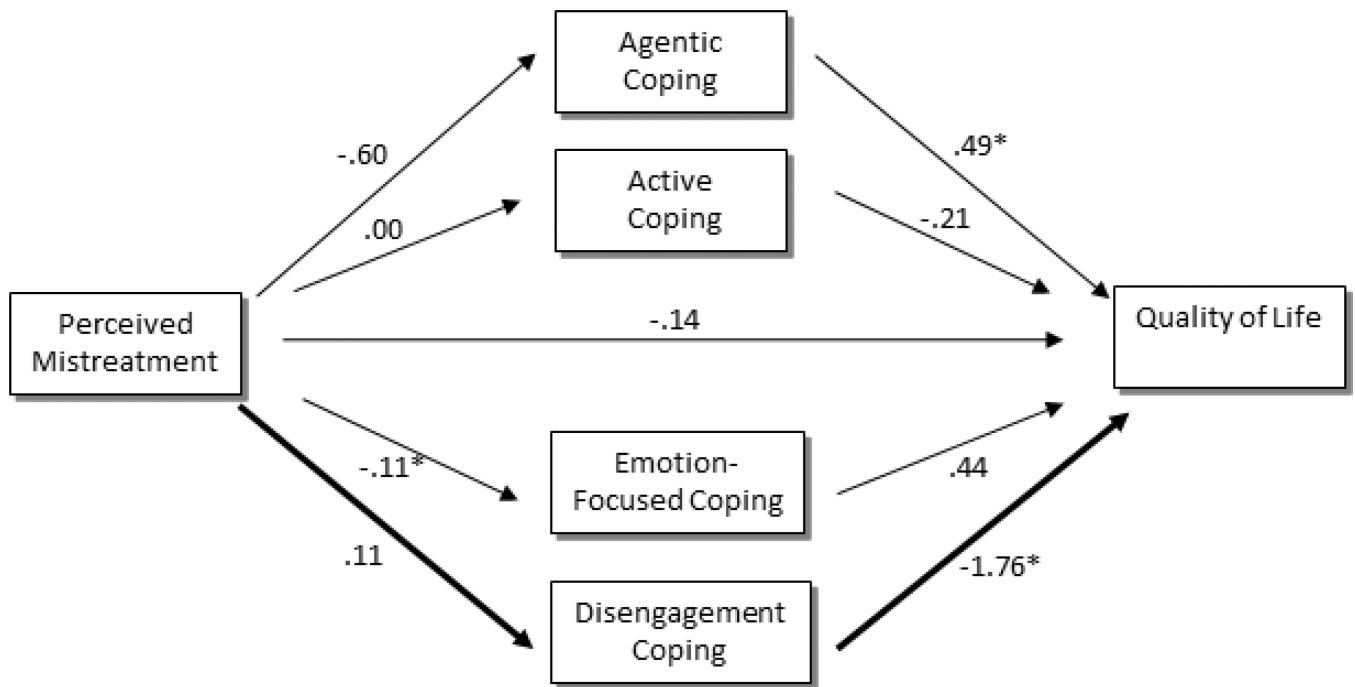


Figure 2. Final mediation model for AAs. Path coefficients with an * are significantly different from zero. Bold arrows denote mediation and direct effects which are significant. Covariates used in the model (age, physical impairment, sex, and income) are not shown.

Table 1

Demographic Information for Participants

	African American (%) N = 214	Caucasian (%) N = 121	Total (%) N = 335
<u>Education</u>			
No HS Diploma	14.5	5.3	10.8
Completed HS	23.3	20.4	20.6
Some College	30.8	25.5	28.4
College Degree	11.7	18.7	14.6
Graduate Work	3.7	7.5	5.7
Graduate Degree	12.6	21.2	17.0
Unknown	3.3	1.2	3.0
<u>Annual Income</u>			
Less than 25K	49.1	18.1	37.9
25K – 49,999	25.7	24.8	25.4
50K – 69,999	10.3	19.0	13.5
Over 70K	10.3	28.1	16.7
Unknown	4.7	9.9	6.6
<u>Religion</u>			
Protestant	57.0	38.8	50.4
Catholic	1.9	37.2	14.6
Jewish	0.0	0.8	0.3
Other/Unknown	41.1	23.2	34.7
<u>Type of Treatment</u>			
Chemo	61.1	65.3	63.0
Surgery	73.4	67.8	71.3
Radiation	58.9	55.4	57.6
<u>Marital Status</u>			
Never Married	18.2	2.5	12.5
Married	33.6	71.1	47.2
Divorced	25.2	14.0	21.2
Separated	7.9	0.8	5.4
Widowed	12.6	7.4	10.7
Other/Unknown	2.4	4.2	3.0
<u>Employment Status</u>			
Employed	36.0	33.1	34.9
Unemployed	19.6	5.8	14.6
Retired	34.1	48.8	39.4
Full Time Homemaker	3.7	6.6	4.8
On Leave From Employment	3.7	2.5	3.3
Unknown	2.8	3.3	3.0

Table 2

Attributions of Mistreatment by Race

	African American (%)	Caucasian (%)
Race	52.8 ^a	2.5 ^b
Ethnicity	16.4 ^a	0.8 ^b
Gender	20.1	17.4
Income	21.5	25.6
Physical Appearance	16.8	21.5
Sexual Orientation	3.7	2.5
Age	15.0	24.0
Language	5.6	2.5
Other	11.7	16.5

Note: Percentages do not add to 100 within each group because participants were allowed to check as many attributions of mistreatment as they felt were appropriate. Superscripts with different letters indicate significant differences in the attribution of mistreatment.